## **GENERAL NOTES**

- 2) Absolutely no stripping of soil from onsite dispersal area

- 6) All trees are to be removed from the septic field area plus room to work.
- Septic field must not be installed when ground is wet or frozen.
- 8) Septic fields are to be landscaped after septic system installation and prior to system being used. Landscaping to be done when ground is dry. Only light weight landscaping tractors allowed on septic field. Landscaping on tank, drop boxes and header line is to be done by hand.

- f) There shall be dual jumps set on an alternating cycle and set such that the off-cycle pump(s) will function as a "lag" with the activation of the high water alam. The activation of the lag pump(s) function shall not silence the salar function shall be controlled by sealed mercury float switches or equal, and the dosing cycles shall be mediated by a time set to activate as described

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING THE REQUIREMENTS OF ALL APPLICABLE SOIL EROSION AND SEDIMENT CONTROL ORDINANCES. THE COST OF ALL WORK NECESSARY TO MEET THESE REQUIREMENTS SHALL BE CONSURED AS INCIDENTAL TO THIS CONTRACT, AND NO SEPERATE

## EFFLUENT LINES HDPE (High Density Polyethylene ) Specifications

GENERAL 1. EARTHWORK AND PAVING SPECIFICATIONS
THE ILLINOIS DEPARTMENT OF TRANSPORTATION "STANDARD
SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION",
LATEST EDITION, AND ALL ADENDA THEREOF, SHALL GOVERN
THE EARTHWORK AND PAVING WORK UNDER THIS CONTRACT,
EXCEPT AS NOTED BY THESE SPECIFICATIONS

3. GUARANTEE
ALL WORK DESCRIBED UNDER THIS CONTRACT SHALL BE
GUARANTEED TO THE COUNTY OF LAKE AND THE
OWNER BY THE CONTRACTOR AND HIS SURETY FOR A
PERIOD OF 12 WONTHS AFTER FINAL ACCEPTANCE OF THE
WORK AGAINST ALL DEFECTS IN MATERIALS AND WORKMANSHIP OF WHATEVER NATURE.

4. EXSTING UTILITIES

WHEN THE PLANS OR SPECIAL PROVISIONS INCLIDE INFORMERS THE PLANS OR SPECIAL PROVISIONS INCLIDE INFORMATION FOR THE PLANS OR SPECIAL PROVISION OF THE PLANS OF THE SUCH INFORMATION REPRESENTS ONLY THE OPINION OF THE PLANS OF THE MANNEY OF THE LOCATION OF UTILITY FACILITIES, NOR THE MANNEY IN WHICH THEY ARE TO BE REPROVED OR ADJUSTED. IT IS CONTRACTOR SEPONDALITY OF SETEMBLE THE ACT.

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ORGINALITIONS WID MAY BE AFFECTED THEREBY

2) ALL THE WORK AND MATERIALS AND EQUIPTMENT TO BE INCORPORATED THEREIN, WHEATHER IN STORAGE ON OR MICOPOTATED THEREIN, WHEATHER IN STORAGE ON OR OF SITE, AND OF SITE OF ADJACENT THERETO, INC. OF SITE OF SI

6. EXISITING ELEVATIONS AND LOCATIONS
THE CONTRACTOR(S) SHALL VERIFY THE ELEVATIONS AND
LOCATIONS OF ALL EXISTING INFORMATION AS SHOWN ON
THE PLANS AND SHALL NOTIFY THE ENGINEER OF ALL
DISCREPANCIES PRIOR TO THE COMMENCEMENT OF WORK.

8) COMPLIANCE WITH LAWS AND REGULATIONS
THE CONTRACTOR(S) SHALL COMPLY WITH A LL LOCAL AND STATE
SAFETY LAWS, REGULATIONS AND ORDINANCES AND FEDERAL
SAFETY REGULATIONS AS OUTLINED IN THE LATEST REVISIONS
OF THE FEDERAL CONSTRUCTION SAFETY STANDARDS AND WITH
ALL REVISIONS AND REGULATIONS OF THE OCCUPATIONAL SAFETY
AND HEALTH ADMINISTRATION (GORAL) STANDARDS.

9. INDEMINITY AND HOLD HARMLESS
THE CONTRACTORS), BY USING THESE PLANS FOR THEIR WORK,
AGREE TO HOLD HARMLESS ARTHUR R. OLSON & CO.
THEIR REMPLOYEES AND AGENTS WHILE ACTING WITHIN THE
SCOPE OF THEIR DUTIES FROM AND AGAINST ANY AND ALL
LABILITY, CLAIMS, DAMAGES, AND THE COST OF DEFENSE
ADDISING OUT OF CONTRACTORS DEPENDANCE OF MOREONING.

12. EXISTING DRAIN TILE
ALL EXISTING PIELD DRAINAGE THE ENCOUNTERED OR DAMAGES
ALL EXISTING PIELD DRAINAGE. LIE RESTORED TO THEIR ORIGINAL
CONDITION, PROPERLY REPORTURED, AND COMMICTED TO THE
NEAREST STORM SEWER, DETENTION BASIN OR OUTLET PIPE

15. FINAL FRAME ADJUSTMENTS
THE CONTRACTOR SHALL MAINTAIN AND KEEP UP TO DATE A SET
OF TRECORD DAWNINGS" SHOWING ALL CHANGES FROM THE
ORIGINAL PLANS. THE CONTRACTOR SHALL DELIVER THE "RECOR
DRAWINGS" TO THE ENDINEER AT THE CONCLUSION OF THE
PROJECT. THE ENGINEER MILL TRANSFER THE INFORMATION
TO THE ORIGINAL PLANS

16.. AS-BUILD DRAWINGS WILL BE PROVIDED TO THE LAKE COUNTY HEALTH DEPARTMENT UPON COMPLETION OF THE IMPROVEMENTS.

SHEETING AND BRACKING
SHEETING AND BRACKING SHALL BE PLACED IN THE TRENCH AS MAY BE 
MCCESSARY FOR THE SAFETY OF THE WORK AND PUBLIC, FOR THE PROTURES, AND FOR THE SAFETY OF THE WORK AND PUBLIC, FOR THE PROTURES, AND FOR THE PROPER IN SHALLATION OF WORK. A NAY VEXTY,
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### NOTICE TO CONTRACTOR

## **ORENCO GENERAL SPECIFICATIONS**

- o ine tank shall also support a Concentrated where load or Zevil Mo.

  There are four (4) liquid loading conditions that should be analyzed:

  1) 4.B. Buy \* Full Exterior hydrostatic Load

  2.4 B. Buy \* Full Exterior hydrostatic Load \* 2500 fb. Wheel Load.

  2) 4.B. Buy \* Full Exterior hydrostatic Load \* 2500 fb. Wheel Load.

  4) Tank Full, Instrict Hydrostatic Load and Unsupported by Soil.

  Load Casa 4 represents the tank full original #2.4 Backurit. This condition addresses seen and haunch stress stain relationships that cocar during watersgiftness testing, as well as poor or all obding conditions that provide standardus bupport.
- c. Tanks requiring deep buril (A4T) or subject to truck or heavy strifts looding require special control of heavy strifts (and the subject to truck or heavy strifts (looding require special control of the subject of the subject
- capable of withstanding long-term hydrostatic cashing, in addition to the soil leading, due to a water table ameniationed aground variace.

  An extraordinary control of the configuration above on the manufacturary of densitys. Modification of completed tanks will not be permitted. It help planning half includes an inite to the presentates 18° in the legal from the information of the top of the properties of the control of the presentation of the legal from the information of the formation of the maximum scum depth.) The inited plumbing shall allow for natural ventilation back brough the bubbles gover and vent details and admit an expectable of the control of the maximum scum depth.) The inited plumbing shall allow for natural ventilation back brough the bubbles gover and vent details and admit an expectable properties of the control of

- b. All trans shall be installed in strict accordance with the manufacturer's recommended installation. Concents Table.
  2. Genotes Table.
  3. Wills. Notions and top of ministrate description of the designed across the shortest dimension using one-way side analysis. Grasses in each rise of monothisticity constructed tables may be determined by analyzing the tank cross-section as a continuous fixed frame. Provided.
  3. The continuous fixed transportation of the continuous fixed frame.
  3. The continuous fixed transportation of the continuous fixed frame.
  4. Concrete shall can fail. As EATH ASE Crost 60 fty 9 6,000 pt.) Details and placement shall be less contained with ASE 105 and ACI 318.
  4. Concrete shall be active fixed shall be keep for 60,000 pt.) Details and placement shall be less contained with ASE 105 and ACI 318.
  4. Concrete shall active a minimum compressive strength of 4000 pt. of 140 pt. The Contraction shall such acreditories in the shall be keep for 60,000 pt. of 140 pt. The Contraction shall such acreditories in the between the contraction of 141. Witerstemment rates shall be keep for 60,000 pt. of 140 pt. The Contraction shall such acreditories in the between the complexed.
  4. Witerstemment acreditories of 140 pt. The Contraction shall such acreditories in the state of 140 pt. The Contraction shall such acreditories in the state of 140 pt. The Contraction and such acreditories in the state of 140 pt. The Contraction of 140 pt. The Contract

- the addition of seal coating.

  From relaxes used on tank moles thall be Non Crete\*\* or approved equal. Disease or other

  From relaxes used on tank moles thall be Non Crete\*\* or approved equal. Disease or other

  From relaxes used on tank moles than the relaxest tha

### Material Properties and Laminates

The laminates considered in this analysis shall be of general-purpose ortho-polyester resin with E-type fiberglass reinforcement or higher grade. The thicknesses for different regions of the tanks shall be described on shown in shop drawings for each individual tank.

The laminate properties listed here, along with the minimum thicknesses as described herein, are considered typical design values that must be maintained during the manufacturing of the tanks.

- Ultimate Compressive stronging (spi.) 21.000
  Ultimate Decord dreeping (spi.) 11.000
  Ultimate Placed dreeping (spi.) 11.000
  Ultimate Placed dreeping (spi.) 11.000
  In the Compressive stronging of the Compressive Stronging

## B. RISERS & LIDS:

B. RISERS & LIOS:

Risers shall be required for access to internal vaults and access into the septic tanks for septage pumping. All risers shall be constructed watertight. The risers shall be attached to the tanks such that a watertight seal is provided. Risers shall extend "above original grade to above for settlement minimum of 18" in monimal diameter. Risers containing pumpings assembles or electrical splice boxes shall be an inimum of 28" in diameter and shall be of sufficient diameter to allow removed internal vaults without removing splice boxes, stc. Risers as table be an inimum of 28" in diameter and shall be of sufficient diameter to allow removed internal vault whose two removing splice boxes, stc. Risers stable be an inimum of 28" in diameter and shall be of sufficient diameter to allow removed internal vault who in the split dispending on the depth of buy on the various tanks. Adhesive required to achieve the PVC or Debregois eries to letter therefore are Allow fault diameter and shall vary in height dispending on the depth of buy on the various tanks. Adhesive required to achieve the PVC or Debregois eries to to either Debregois or ADS that schapers shall be delivered to the split diameter and the split dispending on the depth of buy on the various tanks. Adhesive required to achieve the PVC or Debregois eries to their therefores or ADS that schapers shall be allowed to the split dispending the split

Upmov or a single-common to the and tack with greater flam 1506-pillor capacity interferent (see IPVC as reambetured by Oenco Systemst), inc. or explored report (see IPVC as reambetured by Oenco Systemst), inc. or explored exposity of the contractive of the IPVC as per ASTRO 1774 and tested in contraction with ASSRO MSM448. The interest shall be constructed of non-corresive material and designed to be bursel in soft. Rises shall shall be constructed of non-corresive material and designed to be bursel in soft. Rises shall of withstanding a truck whelle lodd (Seguran Inches) of 2509 pounds for 60 minutes with a maximum vertical deficacion of 112°. Risers shall extend to 7° above the ground surface to allow for settlement and dail there a minimum contact discussed of 11.

3. Outlet Risers:
Outlet Risers:
Outlet Risers:
Outlet Risers:
Outlet Risers:
In the Policy of the Riser Risers Risers

due to task settlement, frost have, or accidental vivicite traffic over the sam.

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One die Alle Die furnische with sach socre rifer. Lide alle or person gystemmit, inc. Model IT LIGE\_BU;
One die Alle Die furnische with sach socre rifer. Lide alle or person gystemmit, inc. Model IT LIGE\_BU;
One die Alle Die furnische Settlement of the Settleme

E. Insulation (if required):
Rigid closed-cell froam insulation of 2" or 4" thickness shall be mechanically attached to the underside of the lid. ADI fastners shall be made of corrosion resistent stainless steel. The insulation shall have an R-value of no less than 10 per 2" increment

Gravity system tanks for single-family dwellings of less than four bedrooms shall be equipped with an Orenco Systems©, Inc. Blotubob Effluent Filter (FI04 Model Series) or engineer-approved equal, installed in conformance with the engineer's plans. The filter shall have an effective flow area of no less than 172 square

## D. SEPTIC TANK EFFLUENT PUMPING ASSEMBLIES:

- Risers & Lids:
   Same as B, 1 through 7, above.
- Same as 8,1 through 7, above.

  2 Pump Vasil. or engineer approved equal, installed in configuration of the second control of the sec
- 4. Float Switch Assembly (also see Alternate):

  Oenco Systemali, Inc. Boold MFAST with three switch floats seconds on a PVC stem stateded to the filler.

  Oenco Systemali, Inc. Boold MFAST with three switch floats seconds without or serving my signal walls. The high, and low-level autims and oniod if function shall be preset as shown in the engineer plans. Each float lead shall be secured with a nyion strain relief bushing at the splice box. The floats shall be U. or CSA is taked and shall be retailed for aminimum of S. Adi, 212 VAC.

Alternate: VeriComm0 Remote Telemetry Float Control System
Crenco Systems B, Inc. Mord MF3A with three switch floats mounted on a PPC atom attached to the filter
Crenco Systems B, Inc. Mord MF3A with three switch floats mounted on a PPC atom attached to the filter
The high- and one everle alternas and ordiff function shall be present even dremoving the pump vant.
Each float lead shall be secured with a mylon strain relief bushing at the splice box. The floats shall be U.C.
or CSA lated and shall be reader or a minimum of SAB (±120 MT).

or flames through the conduit.

Controls and Alarms shall be listed per UL 500. Panels shall be repairable in the field without the use of soldering rose or substantial disease, by Panel shall be repairable in the field without the use of soldering rose or substantial disease, by Panel shall be Orenco Systems (in. b., Lidous) \$170.0TMLT

Standard Components:

Alboor-Stant Control (Control of Systems, United Sys

Optional Components:

I. Pump Bin Light, "Till green lens NEMA 4.1-west bulb, 118 VAC.

In Neater. And: condensation heater. Self-adjusting: notifiers additional wattage as temperature drops.

In Interinsically Self-control Rebyst; 118 VAC. Listed ger UR 118. For Class 1 Div. 1, Groups A, B, C, D

a.Current Sensor: 118 VAC. Goino-go operation. Pump fail Indicator light on panel. Manual reset switch.

Alternate: VeriCommil Remote Telemetry Control System

Alternate: VeriCommil Remote Telemetry Control System
and shald contain the following operating mosts:
A "Start-up Robor' during which the system will collect trend data for establishing future operating standards,
A "Start up Robor' during which the system will collect trend data for establishing future operating standards,
a "Start Mode" that suspends data collection and communications with the central server so that operators
an install and service the system whould articlecting the panis' trend data and web-based communication.

In addition, the control system shall be capable of the following functions:

Loga data of system conditions and events, such as pump run time, pump cycles, alarm conditions, and date conditions.

Programmed to identify and report suspected failed components (Alarms) and negative brends in operating data (Alarts).

Advanced Control Logic
Advanced Logic
Adv

Stellmentry until will province surprise and contractive and c

Standard Components:

A Mork Start Contactor, 11 VA. 1.4 FJ. A, 144, p. (8) Fr. 2.5 million oxides at PL. 111 million

A Mork Start Contactor, 11 VA. 1.4 FJ. A, 144, p. (8) Fr. 2.5 million oxides at PL. 111 million

A Mork Start Contactor, 11 VA. 1.4 FJ. A, 144, p. (8) Fr. 2.5 million oxides of PL. 111 million

A Toggle Starter, 1 Single-poles with, 145 million oxides ox

m. Intrinsically Safe Control Relays: 115 VAC. Listed per UL 698A, for Class 1 Div. 1, Groups A. B.
C. D hazardous locations. Large endosure required.
C. D hazardous locations. Large endosure required.
C. D hazardous locations. Large endosure required.
Cell of the Control Control Control of the Control Control of the Control Control of the Control Control of the Control Contr

2. Pump Vaults:
Onenco Systemoli, Inc., Model PVUB4-2425, Universal Biotubel® Pump Vault or engineer-approved equal, installed in conformance with the engineer's plans. The filter shall have a minimum effective screen area of no less that 20.5 conformance with with the engineer's plans. The filter shall have a minimum effective screen area of no less that 20.5 conformance with the engineer's plans. The filter shall be read to the conformance with the pump value of the pump vault. Housed inside the polyethylene value shall be the Biothose assembly consisting of 187 mesh phypropylene tubes. Attached to the vault is a flow inducer to accept one or two high-head effluent pumps.

5. High-Head Effluent Pumps: Pump must be approved for use in pump vault described above. Pump shall be Orenco Systems®, Inc. Model P960712, 34 hp, 230 VAC, pingle phase, 60 Hz, two-wire motor, with 10-foot long extra heavy duty (SO) electrical cord with ground Each pump shall be capable of providing a nominal flow rate of 50 gpm at a head of 57 feet. Pump shall be UL and CSA listed as an effluent pump. Pump shall be provided with a non-prorated five-year warranty.

6. Electrical Splice Box:
Electrical splice box shall be Orenco Systems®, Inc. Model SB5, UL approved for wet locations, equipped with one electrical cord grip and a 1-inch outlet fitting. Also included shall be UL listed waterproof wire nut.

Deat Collection and Ultitation. Logic date for typtem conditions and events such as pump run time, pump cycles, and aims conditions.
 Deat Collection and Ultitation. Logic date for typtem conditions and events such as pump run time, pump cycles, and aims conditions.
 Deat Collection date of the collection of the collection

Date: mm/dd/yy format
Time of day: 24 hour clock

e. Schedule functions to control digital "Points" based on date or day of week/time.
f.: Automatic daylight savings time adjustment.
g.: Automatic call-out to pagers during alarm conditions when panel detects trends that could lead to sys In addition, the unit shall have the capability of real-time direct connection to the panel via laptop serial port, to allow the operator real-time access to detailed logged data and the ability to change point values.

the operator real-time access to detailed logged data and the ability to change point values.

Standard Component Component County Component County C

8. Recirculating Spillter Valve Assembly:

Orneco Systems(), Inc. Model RSV4U, 4-éch diameter ball valve assembly to provide guaranteed return of
Orneco Systems(), Inc. Model RSV4U, 4-éch diameter ball valve assembly to provide guaranteed return of
Armin and Control (1976), and the control of the Control (1976) of the Control (1

ich sahl be furnished with sach access riser. Lids shall be Orenco Systems®, Inc. Model FL30GH or approved qual, fiberglass with green non-akid finish, Z-inches insulation and provided with stainless steel bobts, and wrench. The riser and lid combination shall be seaded for waterightness and able to support a 2800 lix wheel load. (Note: This is not to imply that PVC risers are intended for traffic areas.) All fasteners shall be made of corrobion resistant stainless steel.

AdvanTex® Treatment System:
Orenco Systems®, Inc. AX100I AdvanTex® Treatment System installed in conformance with the engineer's plan
The AX100I is a packed bed filter consisting of a proprietary textile media. The media has been specifically
engineered for wastewater applications. "Each Advant acp od shall include the following:

closed-cell foam insulation of 1-inch thickness shall be mechanically attached to the underside of the lid. All fasteners shall be made of corrosion resistant stainless steel. The insulation shall have an R-value of no less than 10 per 2-inch increment. Transport Piping / Fittings:
 a.∴All transport piping and fittings from the recirculation/blend tank shall meet a minimum pressure rating of Schedule 40.

 ∴The AdvanTex® pod return lines shall be Class 125 or higher pressure. All fittings shall be Schedule 40.

Drainfield Dosing
2. Pump Vaults
2. Pump Vaults
2. Pump Vaults
2. Pump Vaults
3. Pump Vaults
4. Pump Vaults
4. Pump Vaults
4. Pump Vaults
5. Pump Vaults
6. Pump Vaults
6.

4. Float Switch Assembly: A Float Switch Assembly: A Float Switch Assembly: A Float Switch Assembly and As

# Electrical Splice Box: Electrical splice box shall be Orenco Systems®, Inc. Model SB6, UL approved for wet locations, equipped with one electrical cord grip and a 1-inch outlet fitting. Also included shall be UL listed waterproof wire nut.

Scum Measuring Utility Gauge (SMUG) - Contractor shall provide a minimum of one scum measuring utility gauge per 100 units. The gauge shall consist of a minimum 38" diameter stainless steel rod with an incremental scale for measuring scum levels. The rod shall be bent at 30-degree angle at the base to aid in identifying the scum "by feeling." The gauge shall be Orenco Systems®, Inc. Model SMUG or engineer approved equal.

Sludge Measuring Device - Contractor shall provide a minimum of one engine measuring device per 100 interceptor tanks.

## **GENERAL NOTES & SPECIFICATIONS**

This plan set is based upon the expected flows and waste strengths dated June 30, 2005 for the purpose of serving Canter Park of Long Grove. Any changes in usage that would affect flows or waste strength requires a review by this designer.

	Rarely Exceeds	Average	Weekly
BOD	500	150	250
TSS	150	40	75
TKN	150	65	75
FOG	30	20	25

### FIBERGLASS TANKS

ALL TREES WITHIN THE DRIP FIELD ARE TO BE REMOVED BY CUTTING AND THE STUMPS ARE TO BE GROUND. THE SOIL MUST BE DRY BEFORE WORK IS STARTED AND DURING THE PERIOD OF TREE REMOVAL. RIME OF ILLINOIS MUST BE CONTACTED TO DETERMIN IF THE SOIL IS DRY BEFORE WORK





# **FALCON CREST SUBDIVISION**

LAKE VILLA, ILLINOIS

# **GENERAL NOTES AND SPECIFICATIONS**

10 OF 11

ARTHUR R. OLSON & CO. 965 WESTSHORE DRIVE FOX LAKE, IL. 60020

(847) 651-1150

DATE: 7/12/2006